

REMARKS

Claims 1 through 12 continue to be in the case.

New claims 13 and 14 are being submitted.

New claim 13 is based on claim 11, specification page 13, lines 8 to 11 and Fig. 5.

New claim 14 is based on the language of claim 1 and Figs. 1, 2, and 5 of the drawing.

Claims 1-12 stand rejected under 35 U.S.C. 103 (a) as being unpatentable over Kaga et al. (U.S. Patent No. 5,609,781).

Kaga et al. teach a device comprising a pressure flow generator an automatic control unit (20), a supply capillary connected to a high frequency current supply device e.g. gas and a separating nozzle having a circular cross-section (2). The nozzle is disposed fixedly positioned and coaxial with the supply capillary (see Fig. 38 – 42); further, the nozzle includes at least one twisted groove, wherein the number of twisted grooves and the diameter and the length of the nozzle channel are placed in such a ratio to each other that the separating jet subjected to pressure is rotated.

Kaga et al. have all the features of the invention but Kaga et al. failed to teach a water jet device and the slope of the spiral flutes is dimensioned larger than the diameter of the nozzle channel and wherein the spiral flutes

exhibit a slope angle of from about 39 to 45 degrees, it would have been obvious to one having ordinary skills in the art at the time the invention was made to substitute gas jet for water jet for dispensing. Furthermore, it would have been obvious to one skilled artisan in the art to have the slope of the spiral flutes dimensioned larger than the diameter of the nozzle channel and wherein the spiral flutes exhibit a slope of from about 30 to 45 degrees to achieve a better flow and the jet is subjected to a rotating pressure.

Applicant respectfully disagrees.

The Office Action states that Kaga et al. teach "The nozzle is disposed fixedly positioned and coaxial with the supply capillary (see Fig. 38 – 42);". However the nozzle axis is disposed in vertical direction in Figs. 38 – 42 of Kaga et al. and the feed gas line is disposed in horizontal direction.

Claim 6 of the present application requires: "wherein the separating nozzle is disposed fixedly positioned and coaxial at the supply capillary ,". This is clearly contrary to Kaga et al. showing the nozzle axis disposed in vertical direction in Figs. 38 – 42 of Kaga et al. and the feed gas line disposed in horizontal direction.

Similarly new claim 14 requires: "wherein an axis of the separating nozzle (14) coincides in direction with an adjacently disposed axis of the supply capillary (3),".

Kaga et al. do not show any water jet device for a separation of a biological structure but instead a device for mixing two different streams of air. Therefore, Kaga et al. do not teach a device of the kind disclosed in the present application. It is not possible for technical reasons to employ air for separating biological structures. In addition, the use of air in connection with a biological structure such as a living human body is prohibited for medical reasons. A person of ordinary skill in the art will therefore not look to air streams when biological structures are to be separated. In addition, a person of ordinary skill in the art would be interested in improving the cutting force of a water jet and would not be interested in mixing different streams with each other.

of a water jet and would not be interested in mixing different streams with each other.

Even if a person of ordinary skill would look at Kaga et al., there would only be the teaching that a better mixing behavior would occur if one of the air streams would be furnished with a rotary component. Kaga et al. do not furnish any suggestion that a rotary component of a water jet would generate and deliver a higher cutting force. Thus there is no suggestion or direction to the present invention device derivable from Kaga et al.

Kaga et al. teach furthermore, that a particularly good mixing of two air streams can be achieved where the nozzle channel with the helical grooves for the outer air stream narrows down conically, as shown for example in Fig. 11b of Kaga et al. A person of ordinary skill in the art knows that such a construction generates turbulences in a stream of air. Such turbulences are not useful with a water jet. Thus Kaga et al. is

directed to solve a mixing problem for air streams, whereas the present invention is directed to a biological cutter based on a certain water jet.

Reconsideration of all outstanding rejections is respectfully requested.

All claims as presently submitted are deemed to be in form for allowance and an early notice of allowance is earnestly solicited.

Respectfully submitted,

Andrea Pein

By: 
Horst M. Kasper, his attorney,
13 Forest Drive, Warren, N.J. 07059
Tel.:(908)526-1717 Fax:(908)526-6977
Reg. No. 28,559; Docket No.: JAA208

mm/am/rep